

Sycamore Progeny Trials

Research Report

Supported by Vastern Timber

Background

Demand for healthy and productive sycamore plants for use in new woodland establishment is set to increase, which will require a substantial increase in the supply of improved germplasm. Indeed, sycamore is a species identified as one of several that could replace ash. As present, we have three clonal seed orchards for sycamore in the UK, and two in the island of Ireland, which contain all plus trees selected in Britain and Ireland. Seed from these orchards falls into the qualified category of forest reproductive material. We need to establish progeny trials of sycamore to inform our breeding programme, identify superior individuals and calculate breeding values and heritability of traits. This information will allow us to rogue our clonal seed orchards, to improve the quality of seed produced (in terms of timber trait) and move the qualified seed orchards to tested.

Progress in 2020/21

To carry out progeny trialling, the first step is to collect seed by individual mother tree. We visited the clonal seed orchards in June 2021 to assess flowering of each tree. This was necessary to give an indication of likely seed availability.



Sycamore flowers very late, and although we thought we timed this appropriately (sites visited between 28th May and 8th June), evidently, we were too early. Because flowering appeared to be sparse, we also contacted colleagues in Ireland where there are a further two clonal seed orchards.

We visited each orchard and collected seed by individual mother tree, although in some cases we needed to visit several ramets (copies) of the same tree to get sufficient seed. Approximately 200g (fresh weight) of seed was collected from each mother tree with the aim of producing 120 plants per family. All seed were sent to Forestart Ltd where they were placed in cold storage prior to seed stratification. Seed stratification is the process of breaking dormancy in the seed, and allows for a more uniform germination which therefore yields higher success. Seed entered stratification in December 2021.



Collecting seed from Elson clonal seed orchard in late September.



Collecting seed from Loughgall clonal seed orchard in early October. Each seedlot is weighed, labelled and bagged separately.

Next Steps

After stratification, the seed will be delivered to Cheviot Trees where they will be cell grown under contract during spring 2022. The following winter 2022/23 we will establish a minimum of three, and possibly four progeny trials, depending on plant availability. Three sites have already been identified, and Material Transfer Agreements drawn up for use of the material. These are located with the Duchy in Herefordshire, on the public Forest Estate in Kent, and on a private estate in Yorkshire. We had intended to plant a fourth trial at Loughgall in County Armagh. However, with Brexit and new tree health regulations, it may prove very difficult / impossible to take plants to Ireland. Instead, we may consider planting a fourth trial in Scotland, also on the public forest estate.

We are extremely grateful to Vastern Timber for supporting our sycamore breeding programme. This year, we spent the funding on carrying out flower assessments and seed collection. We couldn't undertake this work without your support. Thank you!

Jo Clark
Head of Research
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